

REMARKS

Claims 32 through 40 were rejected in a Final Action dated November 27, 2001 as being anticipated by U.S. Patent 4,775,823 to Yoshida et al. By the present amendment claim 32 is amended and the subject matter of claims 33-40 is replaced with new claims 41-43.

As described in applicant's application an electric motor is used to move a movable barrier. A controller responds to many conditions to control the speed at which the barrier is moved which barrier speed is a direct function of the speed of the motor. The controller controls motor speed by generating a sequence of pulses which are applied to the motor. In one described embodiment the controller varies the lengths of the applied pulses to vary the speed of the motor. Other variations of the pulses are also possible to control the motor speed.

When the motor is stopped and started the power to the motor is diminished and increased, respectively, by controlling the pulses.

Advantageously, the increase and decrease of motor speed is done by controlling the pulses so that the motor speed is changed linearly. Such linear speed change is more pleasant to the user and better for the system because rapid acceleration and deceleration, as are caused if full power is just turned off or on, are avoided.

The system described by Yoshida et al. does not discuss a linear increase and decrease in motor speed and significantly does not teach any way to accomplish such. Although a drafter of the figures has chosen to show changes in speed graphically as slowly increasing, nothing in the specification suggests such or how it might be accomplished. The only discussion found occurs at Col. 4, lines 7-12 (see also Col. 3, line 45) where Yoshida et al. indicates that brakes are applied to stop the motor when needed.

Claim 32 as amended recites that pulses are generated and a controller controls the generation of pulses to vary door speed and that changes in door speed are controlled to be linear. No such function is taught or suggested by Yoshida et al. The pulses P1 of Yoshida et al. are not generated to control door speed, but merely represent door position (see Col. 2, lines 61-64). Further, Yoshida et al. does not teach or suggest controlling such motor speed and it does not teach or suggest controlling such pulses to linearly vary motor speed as claimed in claim 32, as amended.

In view of the foregoing, Yoshida et al. does not teach the generation and control of pulses by a controller to control motor speed. Accordingly, it does not anticipate applicant's claim 32 as amended.

New claims 41-43 are believed allowable due to their dependence on claim 32. Further, Yoshida et al. does not suggest the operation in response to door size of claim 42 or the operation in response to a maximum length of travel.

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An additional page showing a marked-up version of amended claim 32 accompanies this amendment.

The Commissioner is hereby authorized to charge any fees which may be required in the filing of this amendment to Deposit Account No. 06-1135.

Respectfully submitted,

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MARKED CLAIM 32 SHOWING CHANGES

32. (Amended) A motor control for a movable barrier operator, comprising:

a circuit for providing a pulse signal comprising a series of pulses;

a motor control circuit responsive to the pulse signal, for starting the motor and for determining the direction of rotation of the motor output shaft;

a motor connected to said motor control circuit for moving a barrier at a speed determined from the pulse signal;

a detector [coupled to the motor control circuit] for detecting a predetermined characteristic relating to movement of [a] the movable barrier; and

a controller for controlling the generation pulses in the pulse signal, [in accordance with the detected characteristic, wherein, in accordance with the detected characteristic], the pulses of the pulse signal being controlled to vary a speed of the motor [is] linearly [varied] from an initial speed to an adjusted speed determined from the detected characteristic.